

FIG. 1A  
(PRIOR ART)

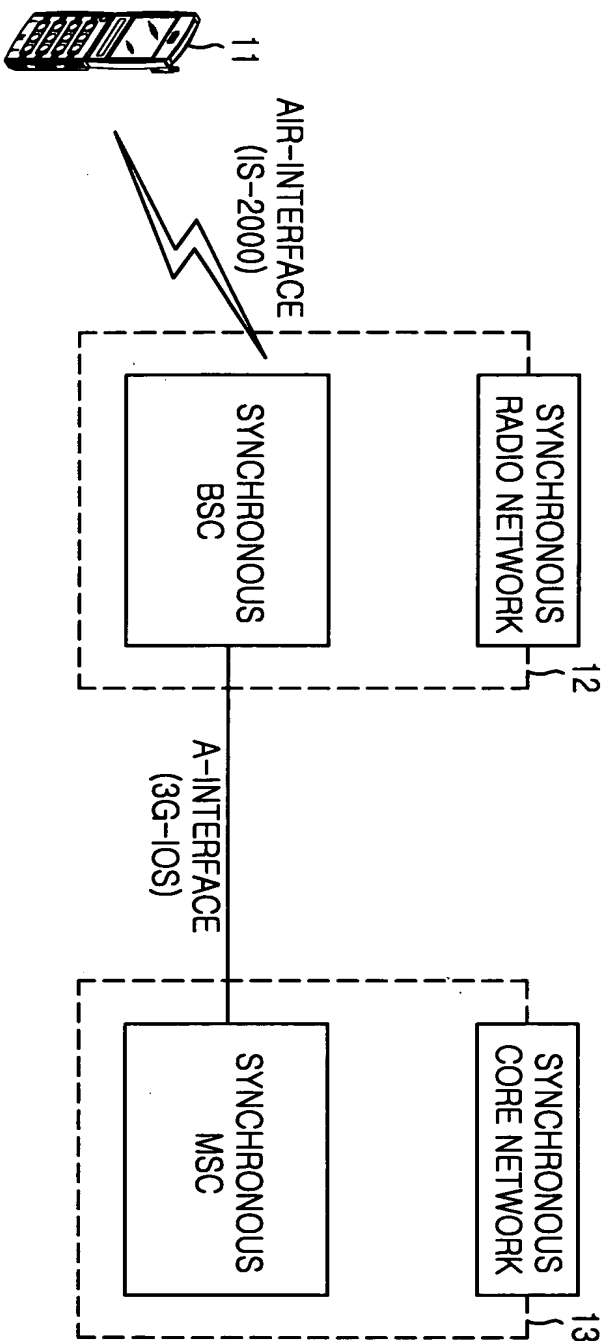


FIG. 1B  
(PRIOR ART)

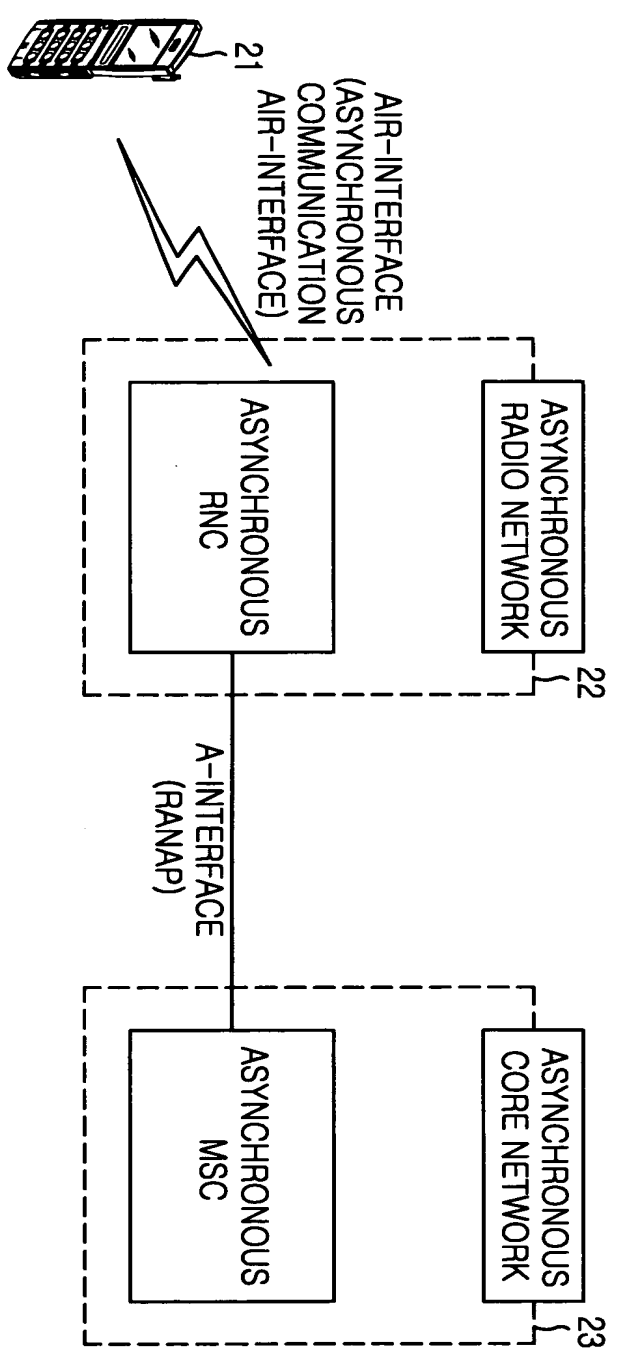


FIG. 1B is a block diagram of a prior art asynchronous communication system. The system includes a mobile device (21) connected to an asynchronous radio network (22) and an asynchronous core network (23) via an A-interface (RANAP). The asynchronous radio network (22) includes an asynchronous RNC (Radio Network Controller) block. The asynchronous core network (23) includes an asynchronous MSC (Mobile Switching Center) block. The A-interface (RANAP) connects the asynchronous RNC block to the asynchronous MSC block.

FIG. 2A  
(PRIOR ART)

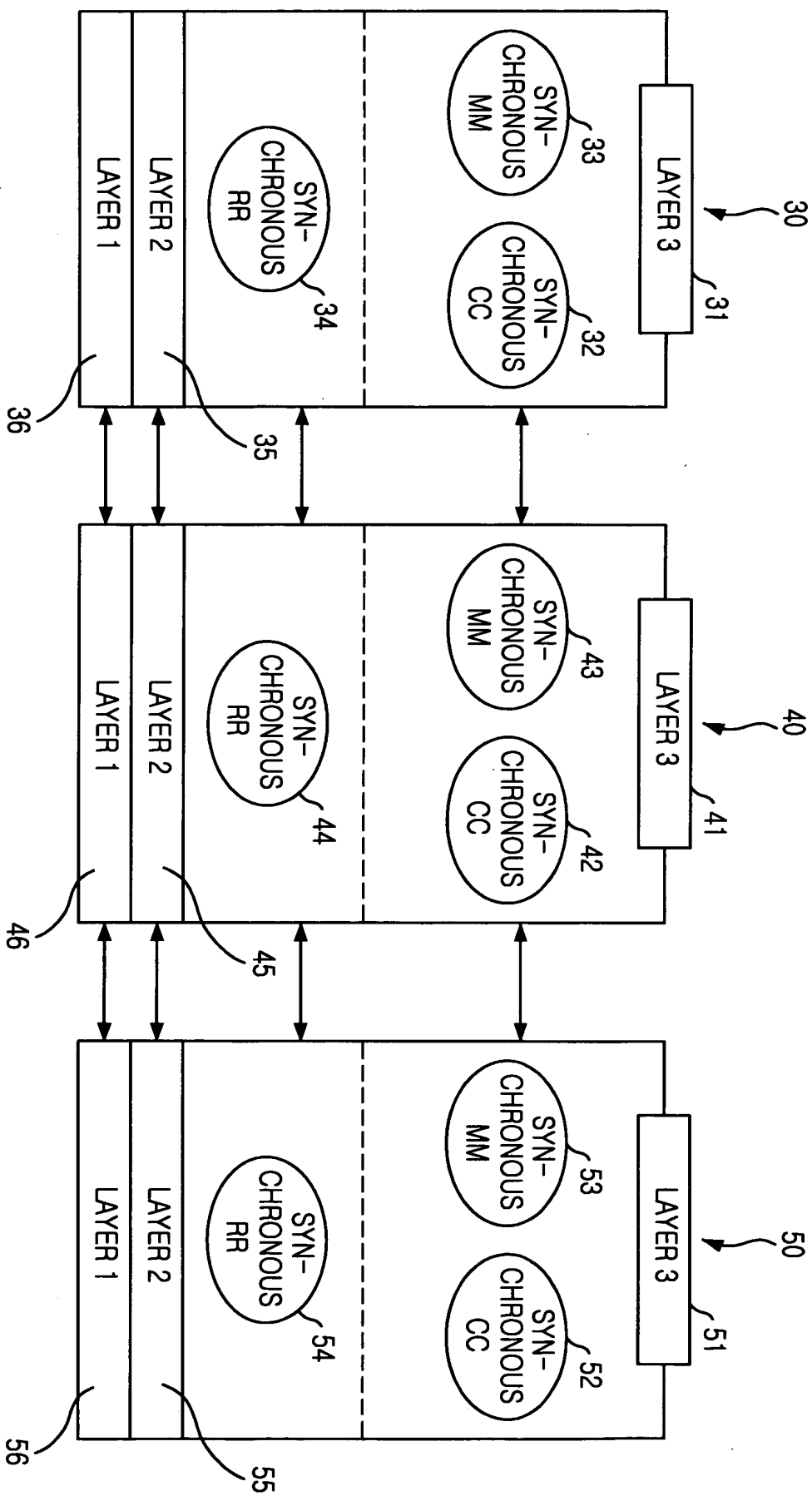


FIG. 2A is a block diagram of a prior art system architecture. The system architecture includes three layers (Layer 1, Layer 2, and Layer 3) and three communication components (MM, CC, and RR). The components are arranged in a vertical stack, with Layer 3 at the top, Layer 2 in the middle, and Layer 1 at the bottom. The connections between layers are indicated by double-headed arrows.

FIG. 2B  
(PRIOR ART)

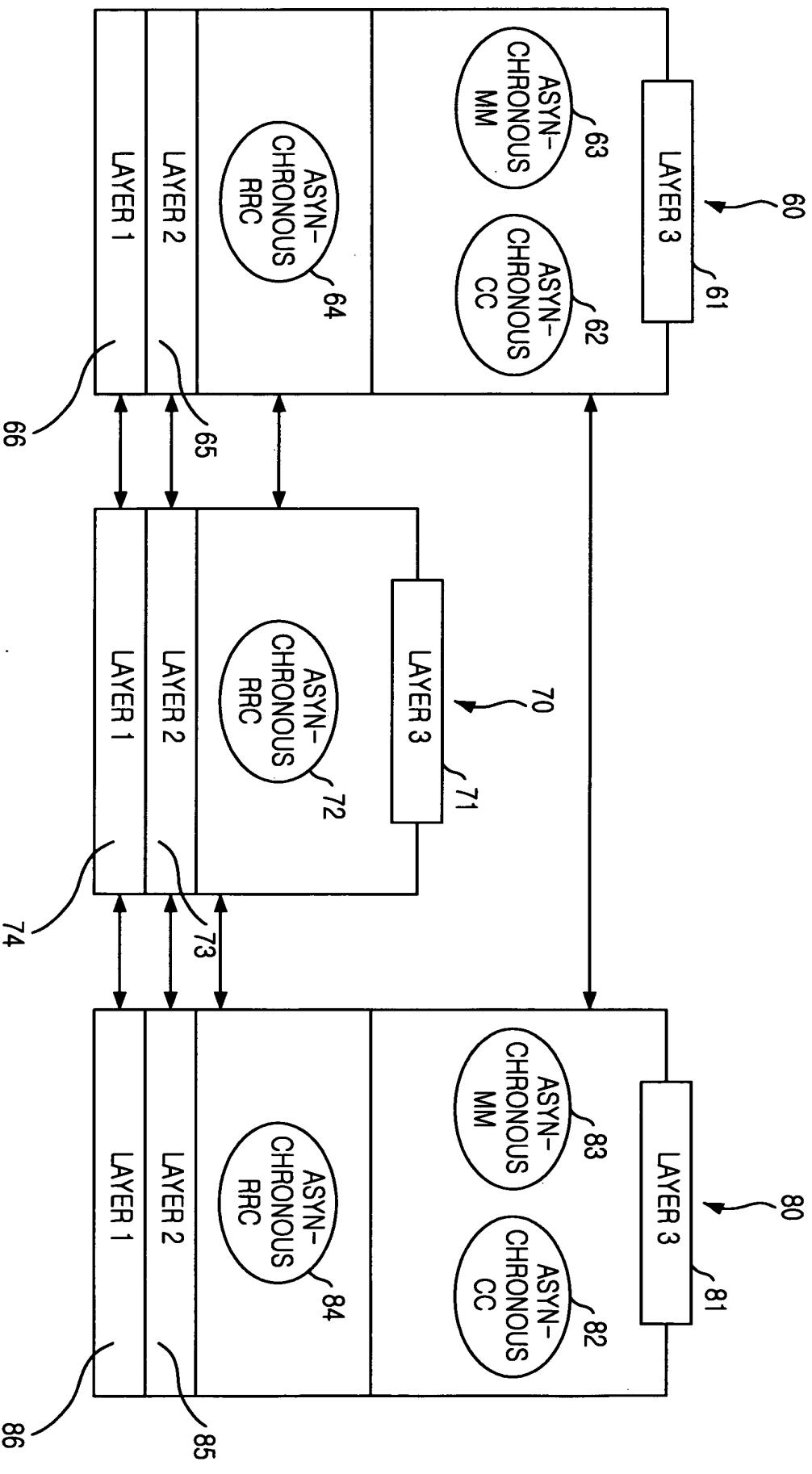


FIG. 2B is a block diagram of a system architecture (60) according to one embodiment of the present invention. The system architecture (60) includes a main block (61) and a sub-block (62). The main block (61) includes a layer (63) and two asynchronous/chronous components (62, 63). The sub-block (62) includes a layer (65), a layer (66), and an asynchronous/chronous component (64). Bidirectional arrows indicate communication between the main block (61) and the sub-block (62).

FIG. 3A

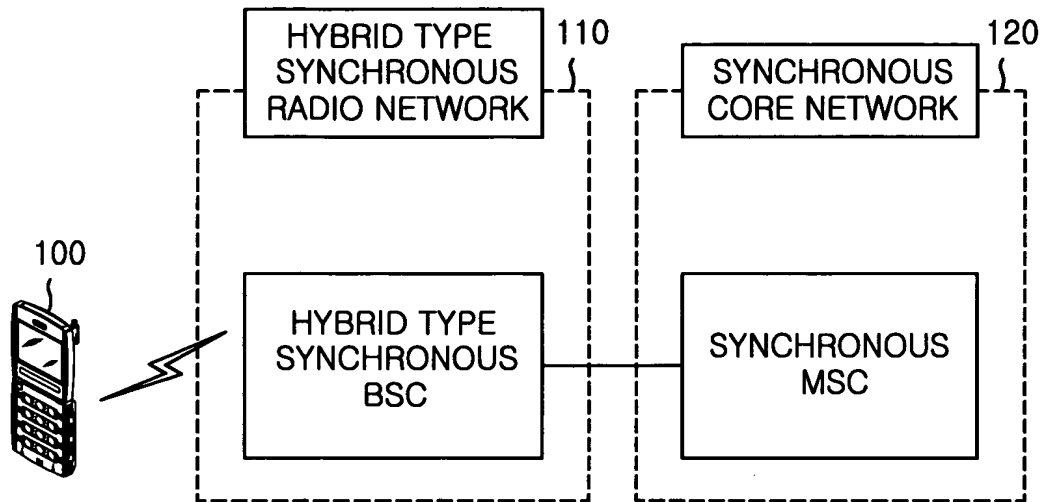


FIG. 3B

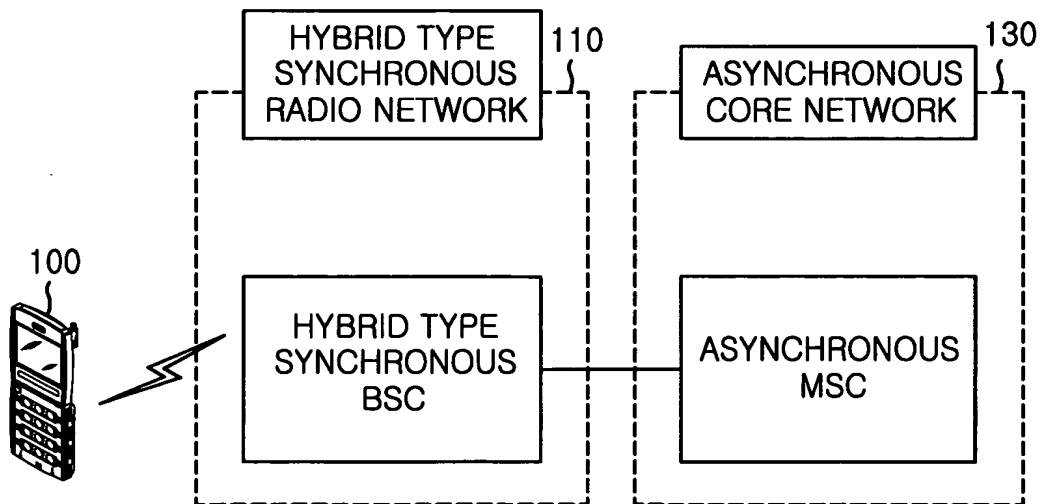


FIG. 3C

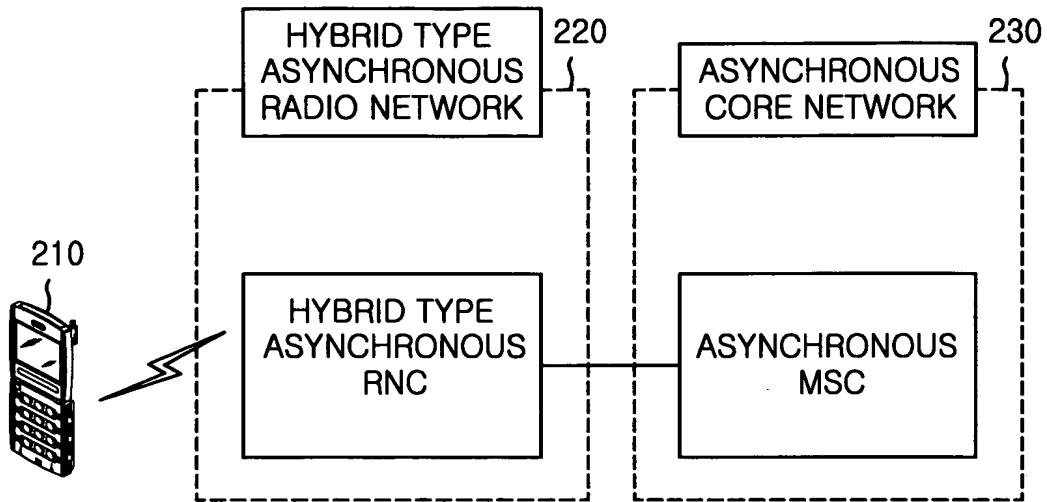


FIG. 3D

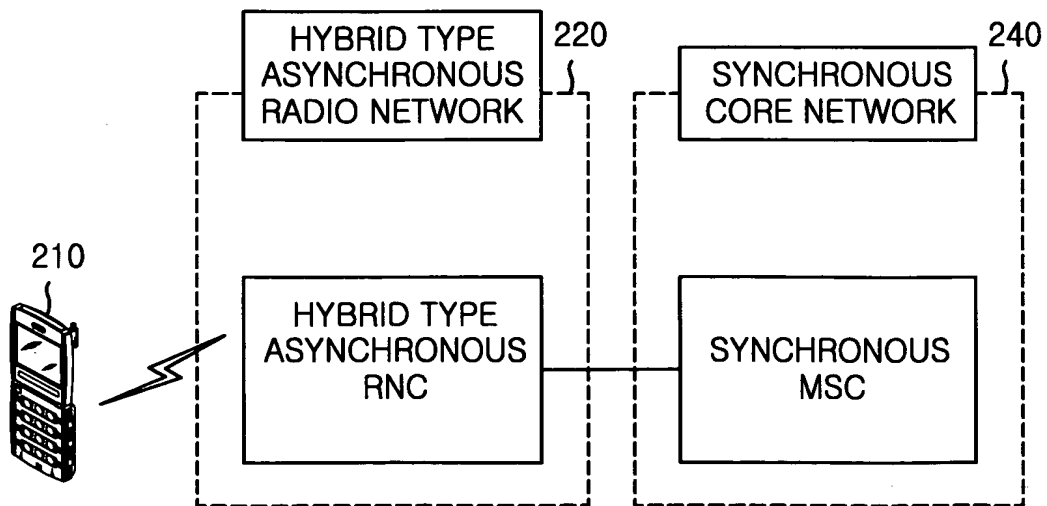


FIG. 4A

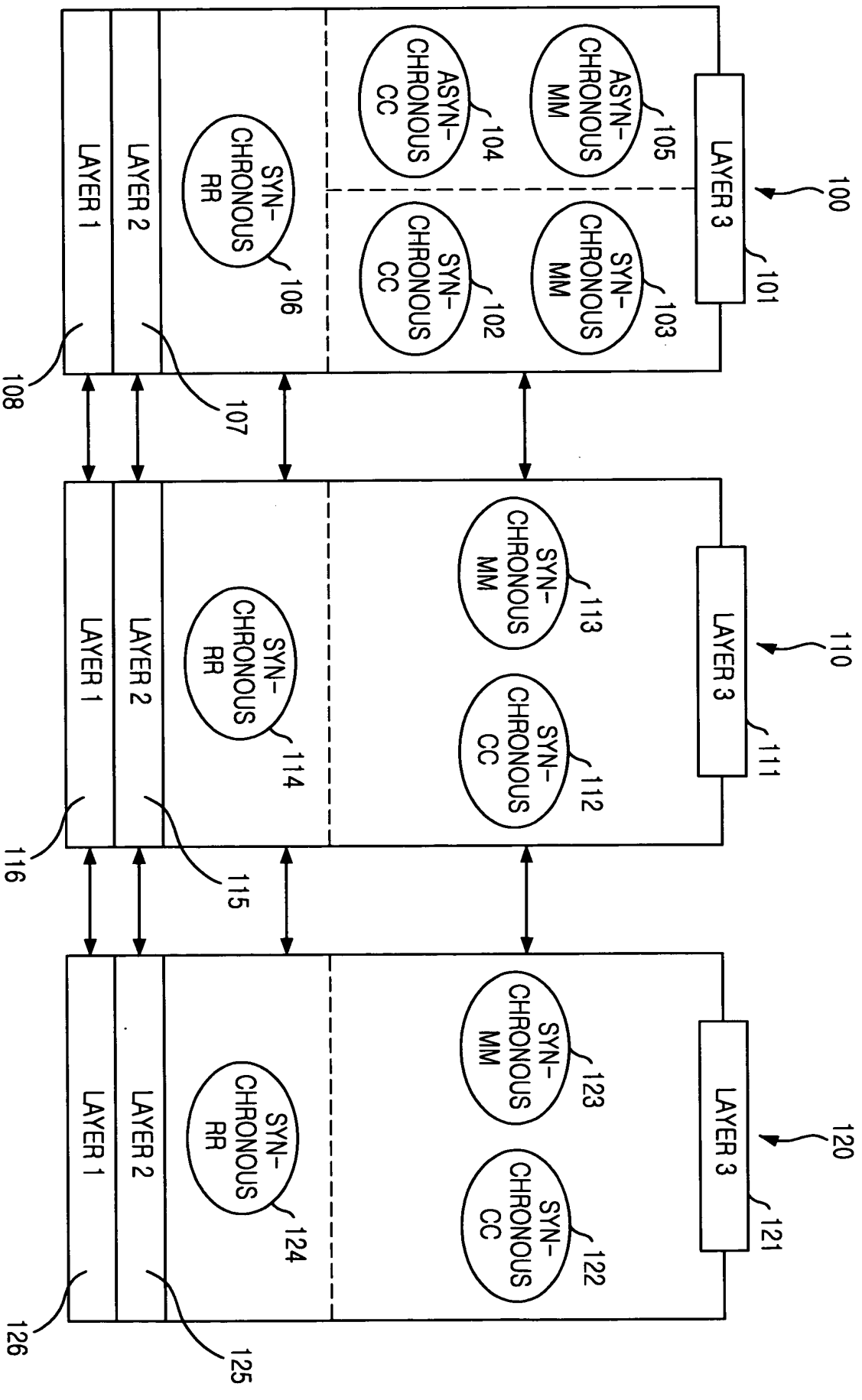


FIG. 4B

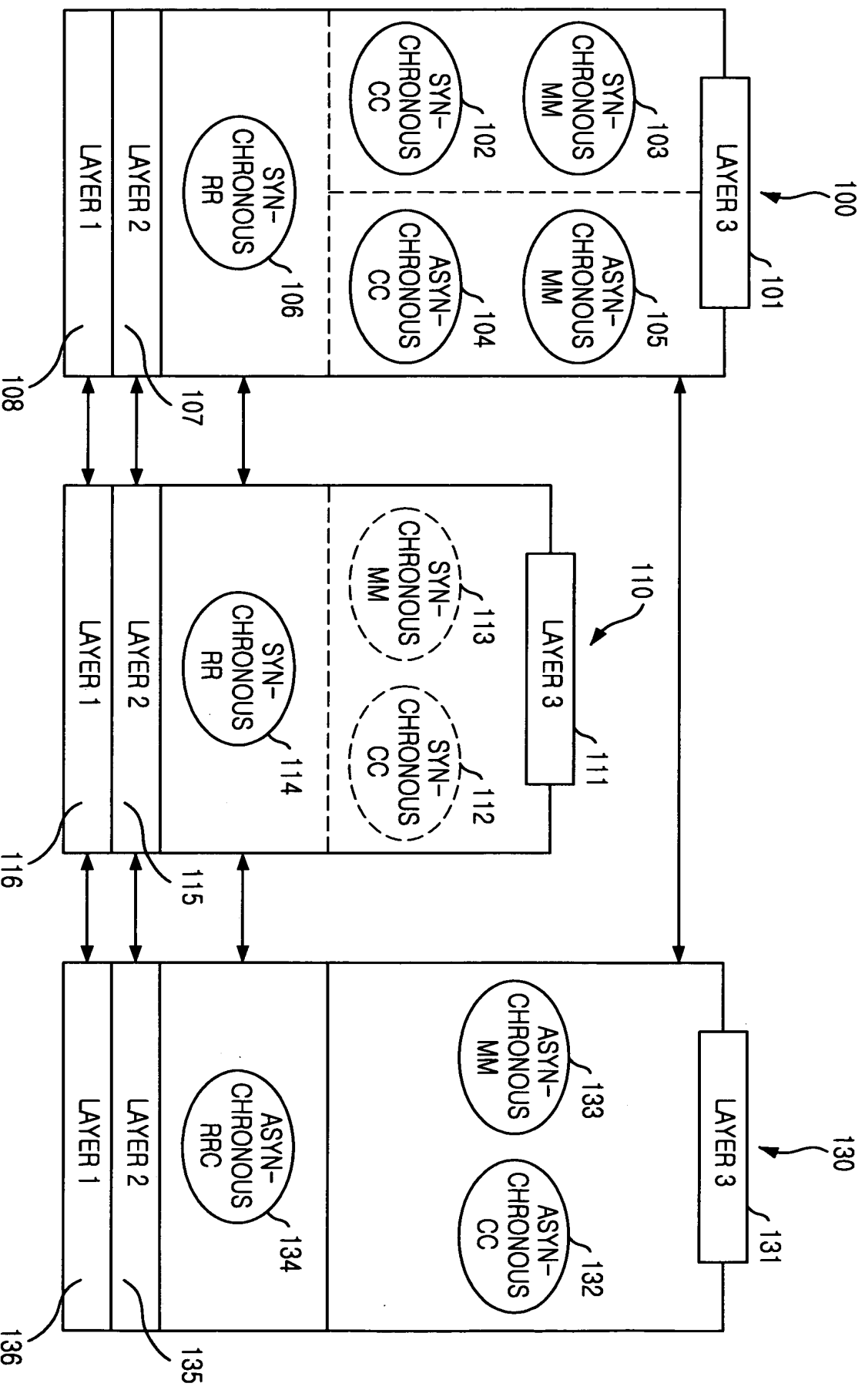


FIG. 4B is a block diagram of a system architecture. The system architecture includes a main block and a layered structure. The main block includes four components: SYN-CHRONOUS MM (103), SYN-CHRONOUS CC (102), ASYN-CHRONOUS MM (105), and ASYN-CHRONOUS CC (104). The layered structure includes three layers: LAYER 3 (101), LAYER 2 (107), and LAYER 1 (108). A dashed line separates the top two layers of the layered structure. Bidirectional communication is indicated between the main block and the layered structure (100 ↔ 107).



FIG. 4C

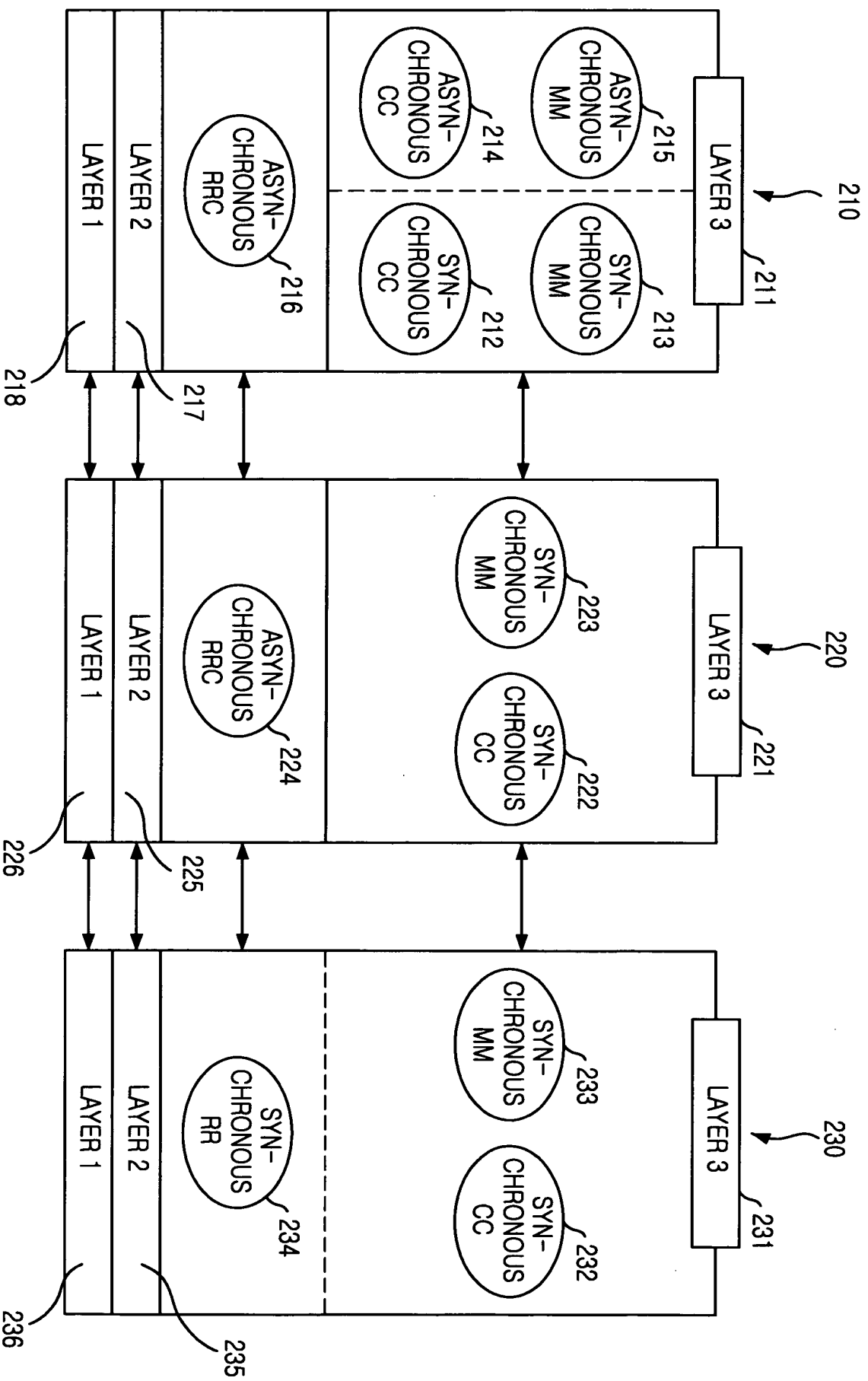


FIG. 4D

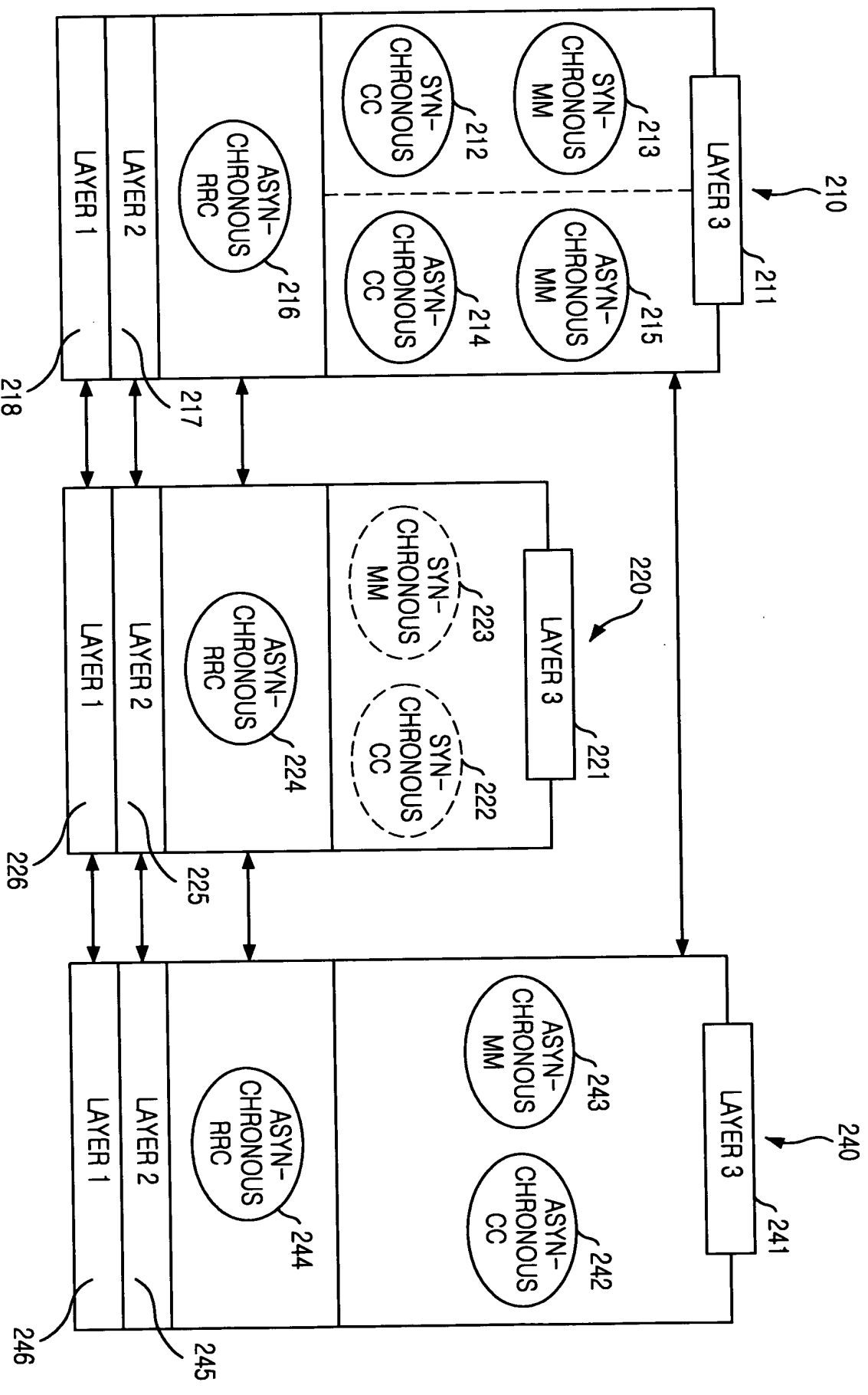


FIG. 5

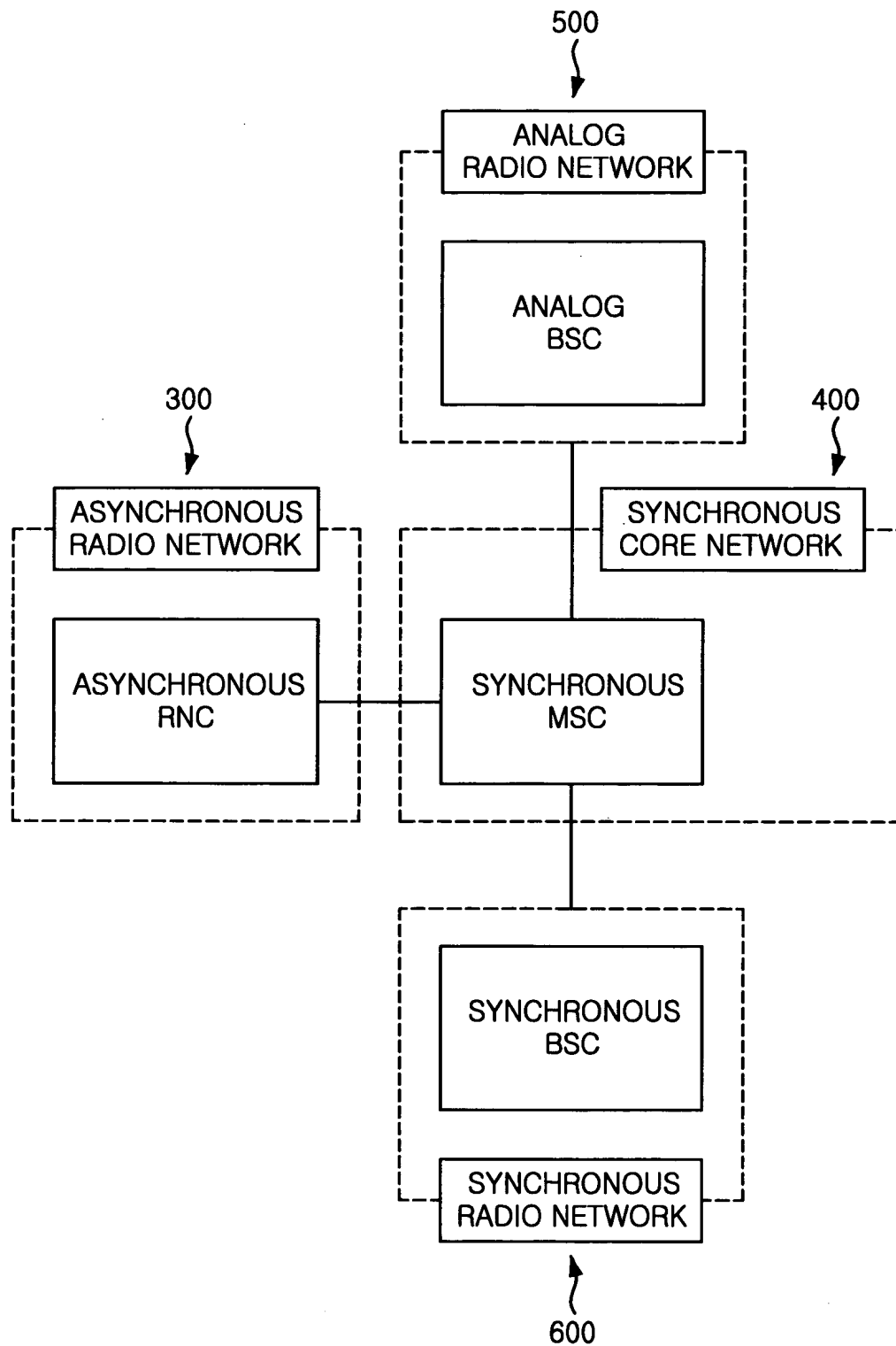


FIG. 6

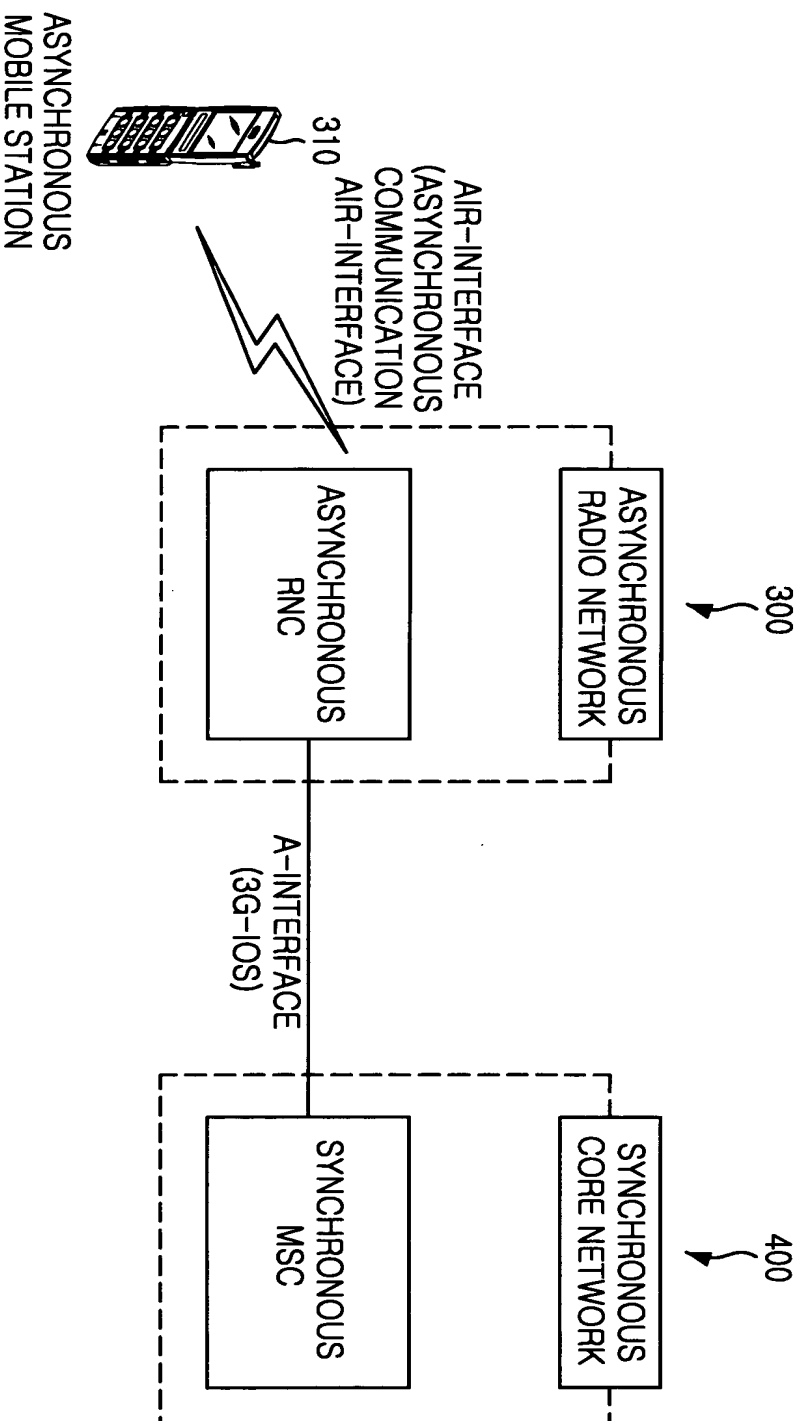


FIG. 7A

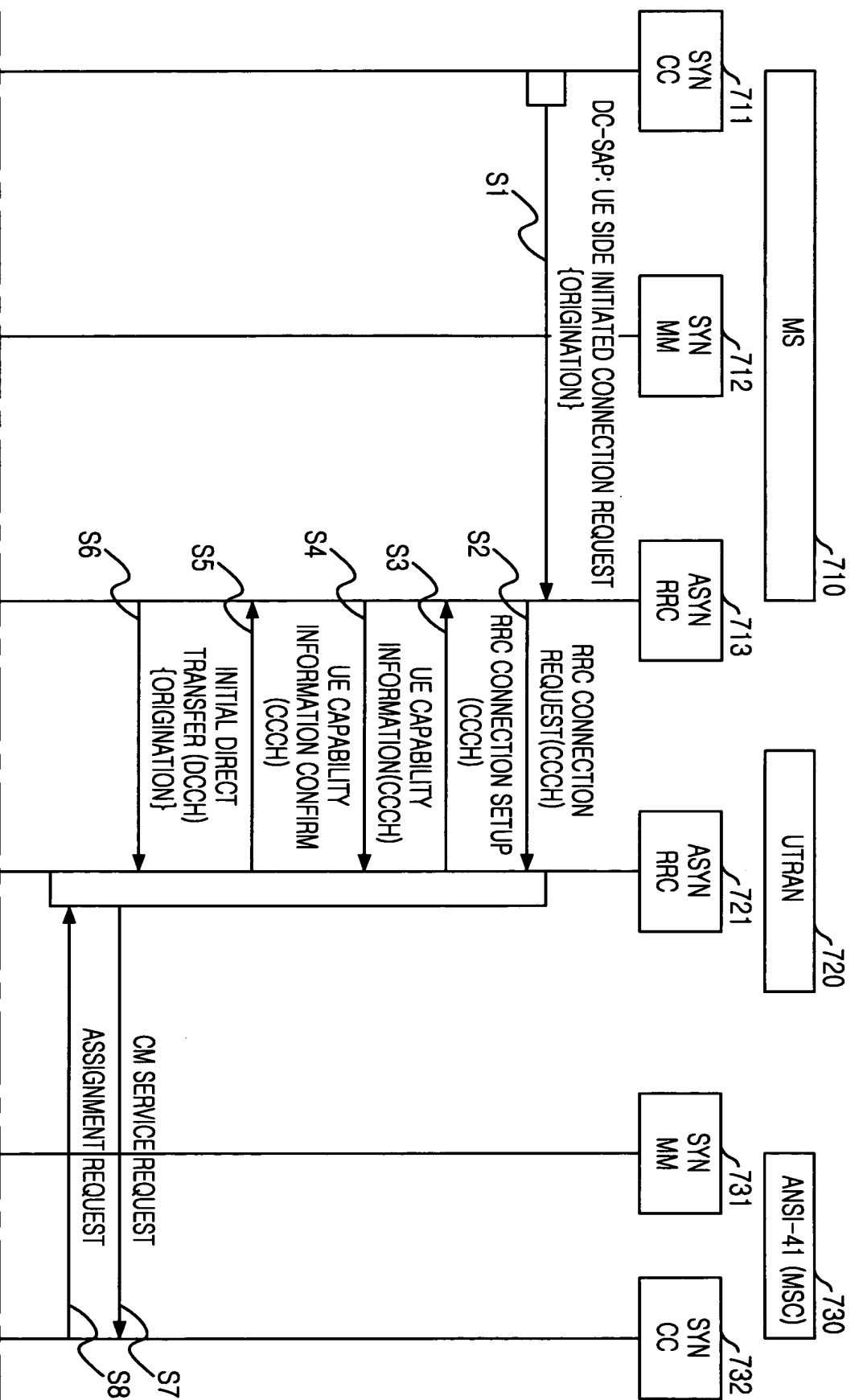


FIG. 7B

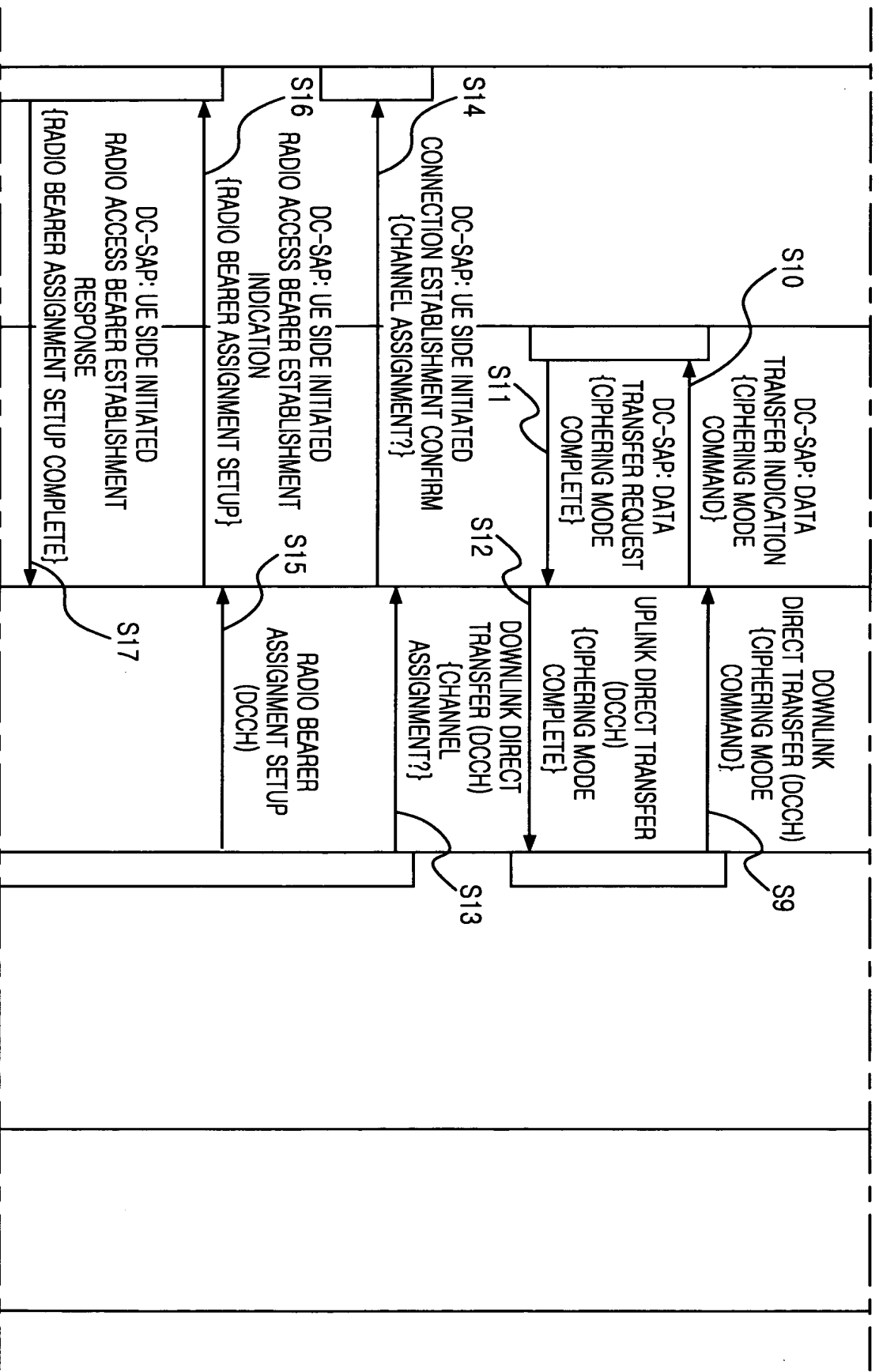


FIG. 7C

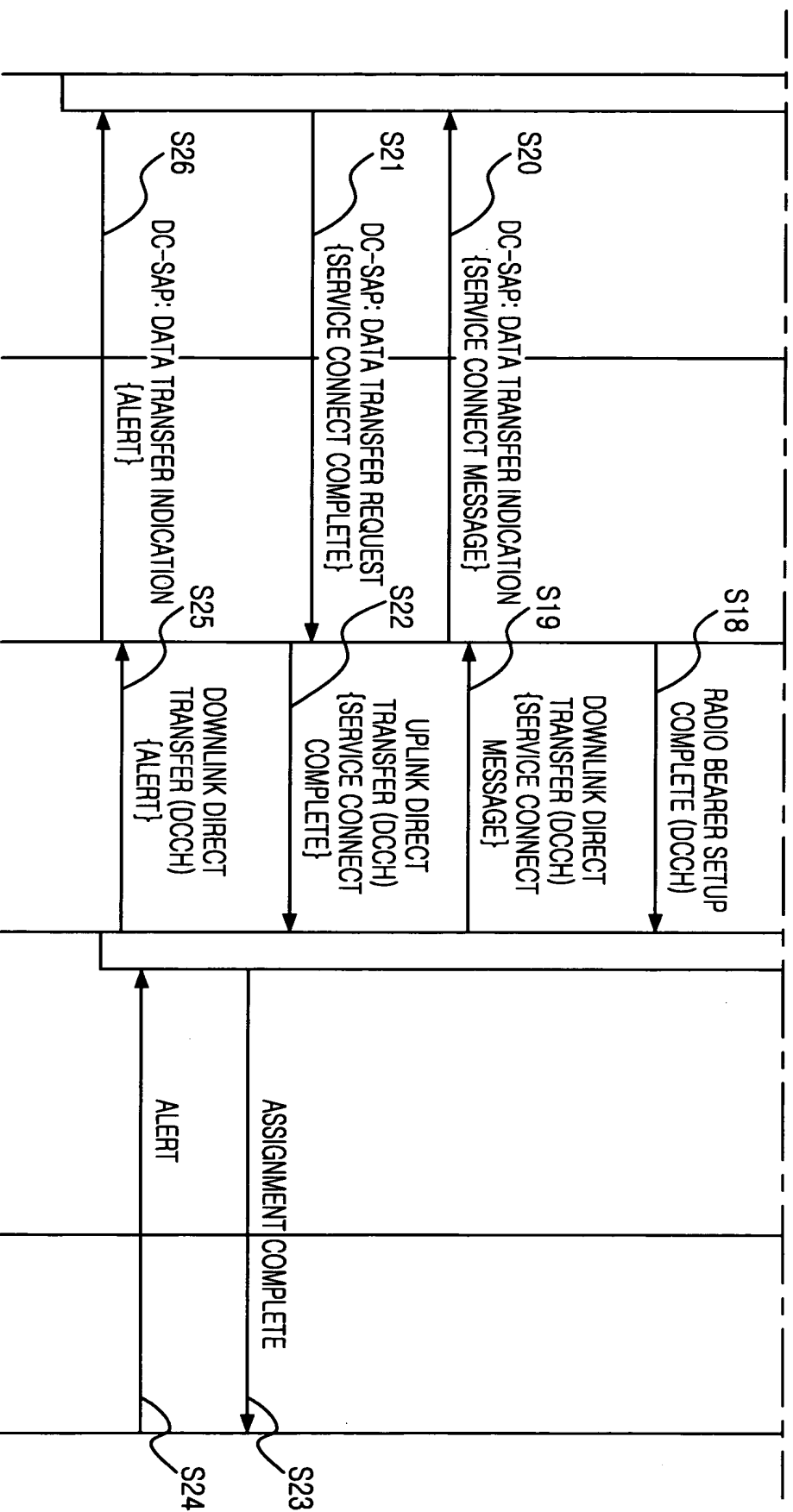


FIG. 8

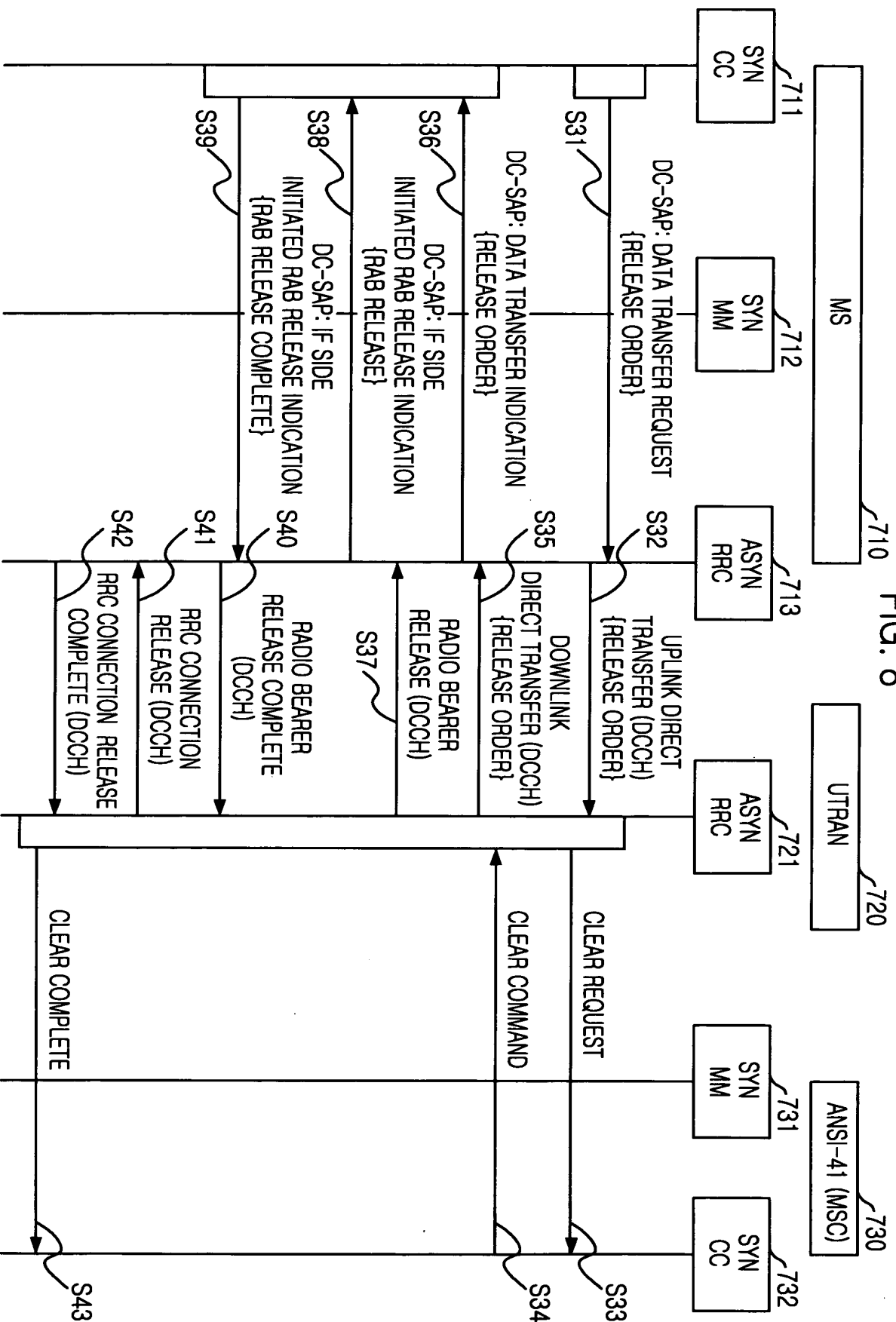




FIG. 9

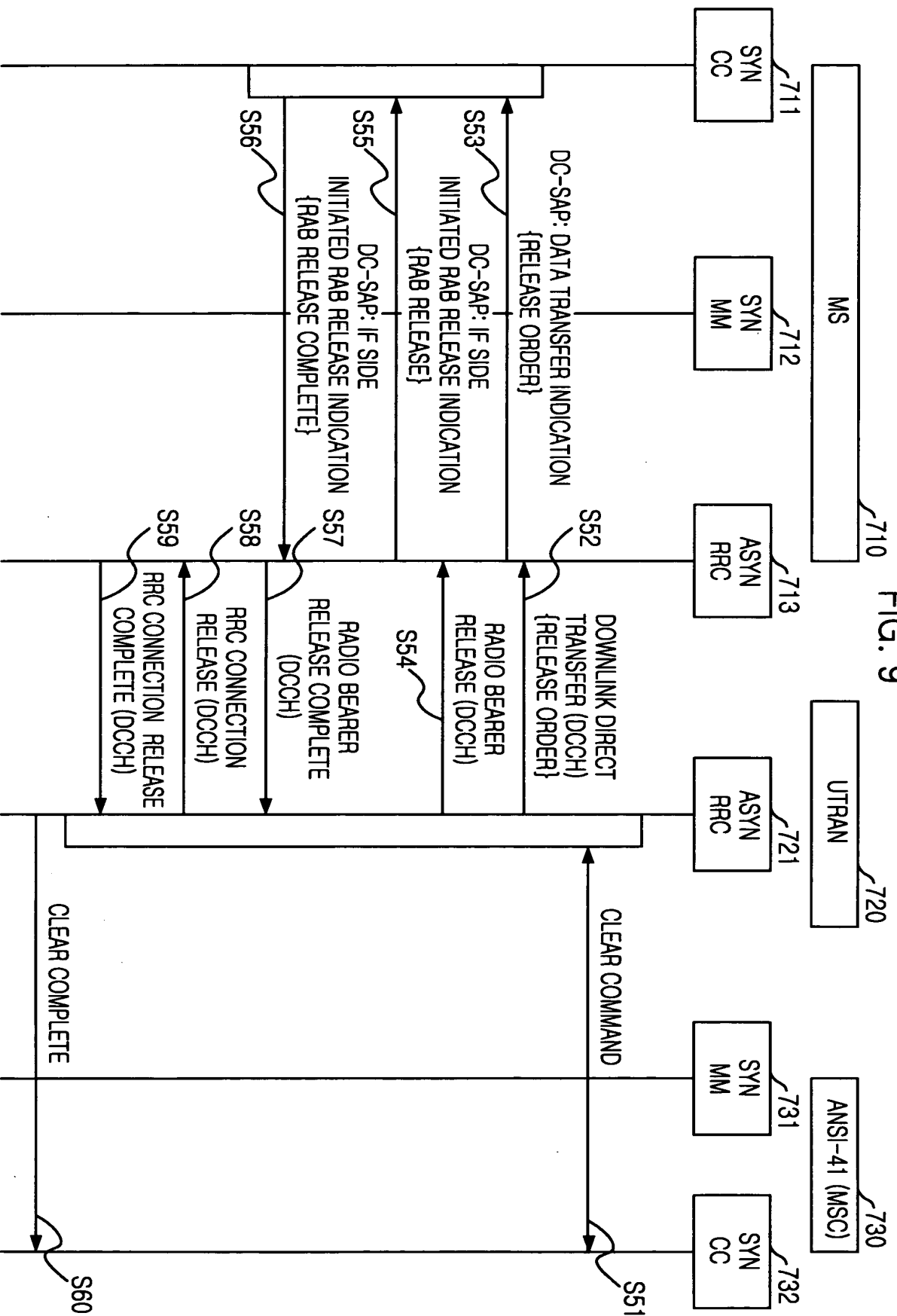


FIG. 10A

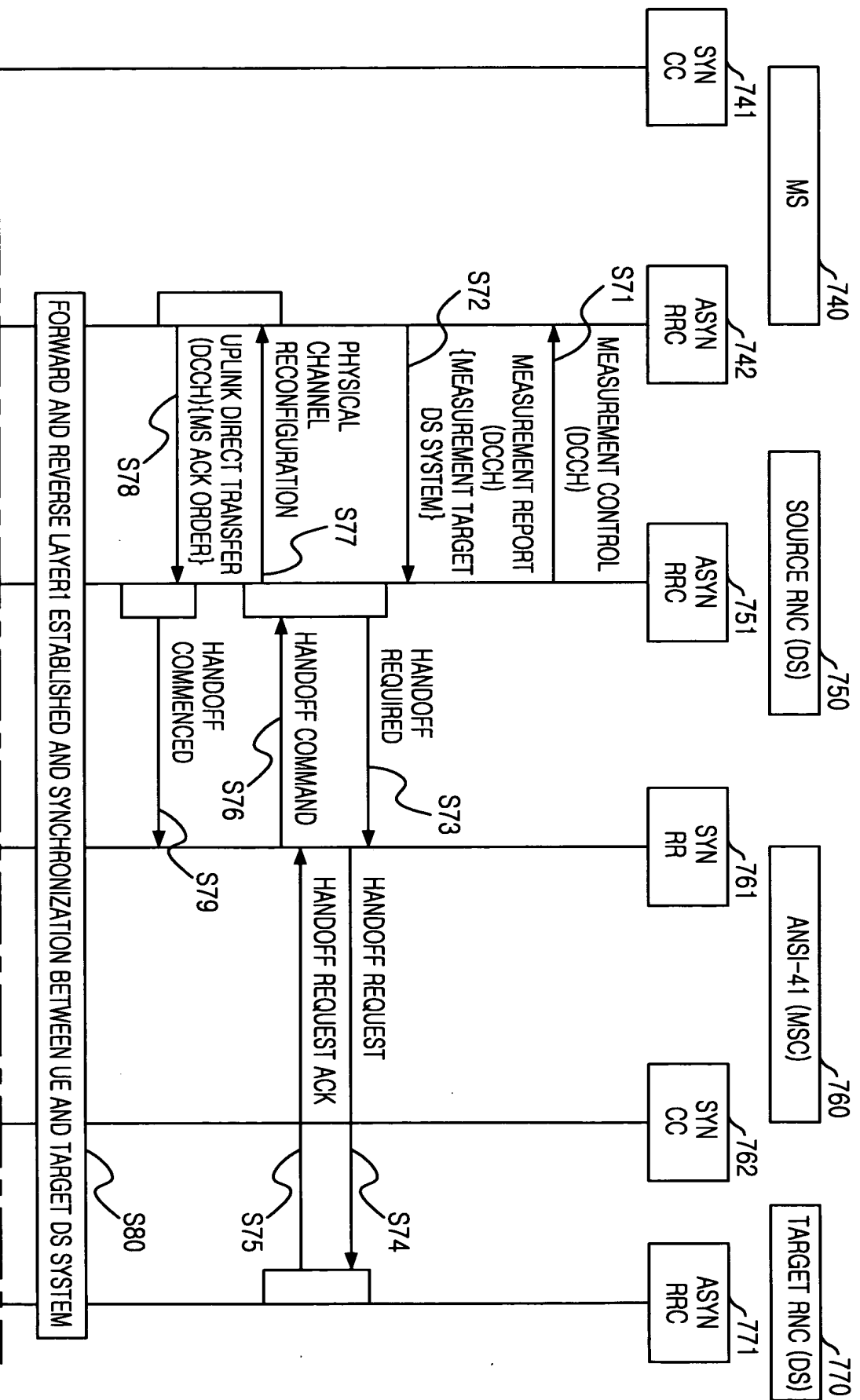


FIG. 10B

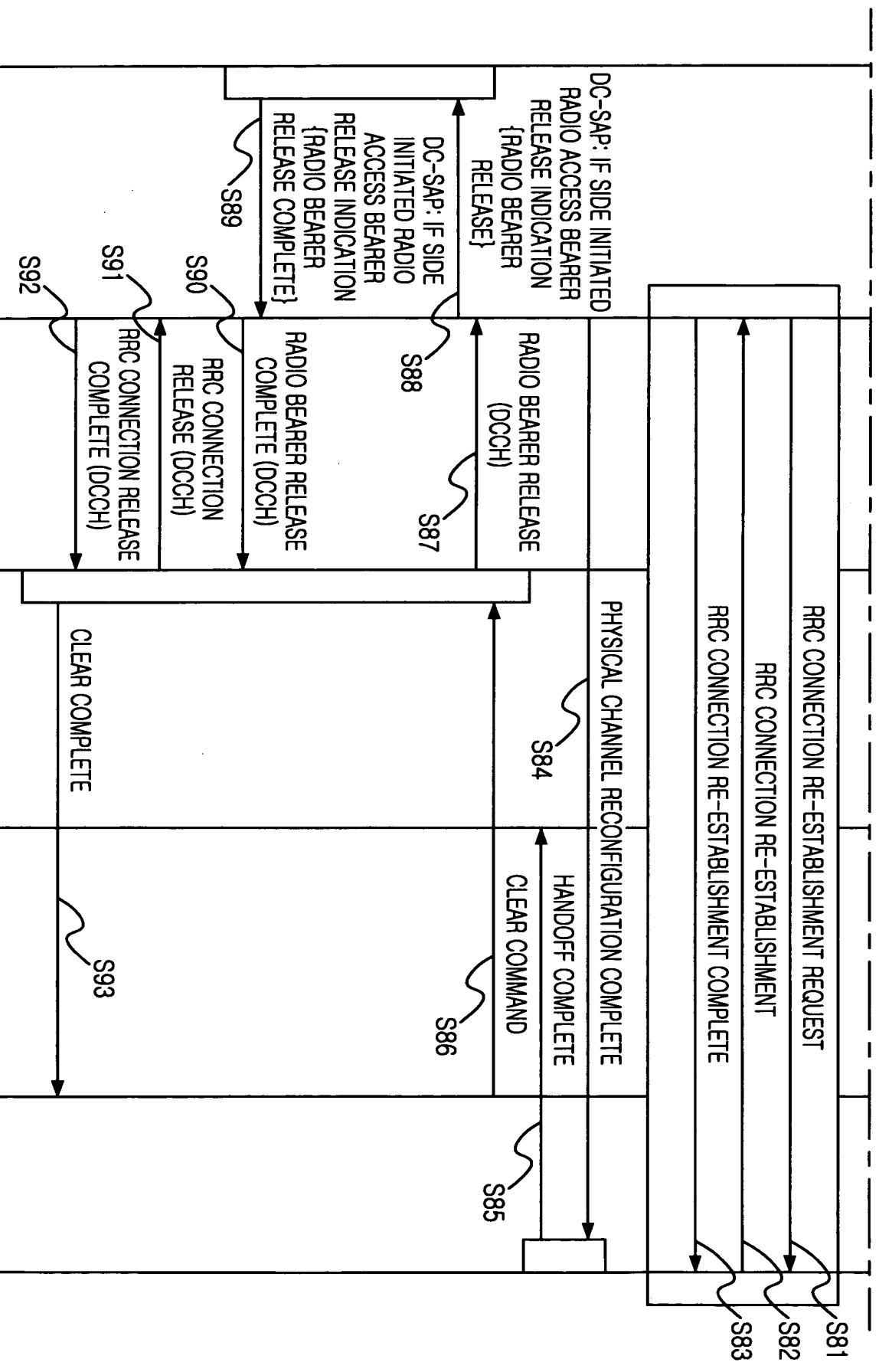


FIG. 11A

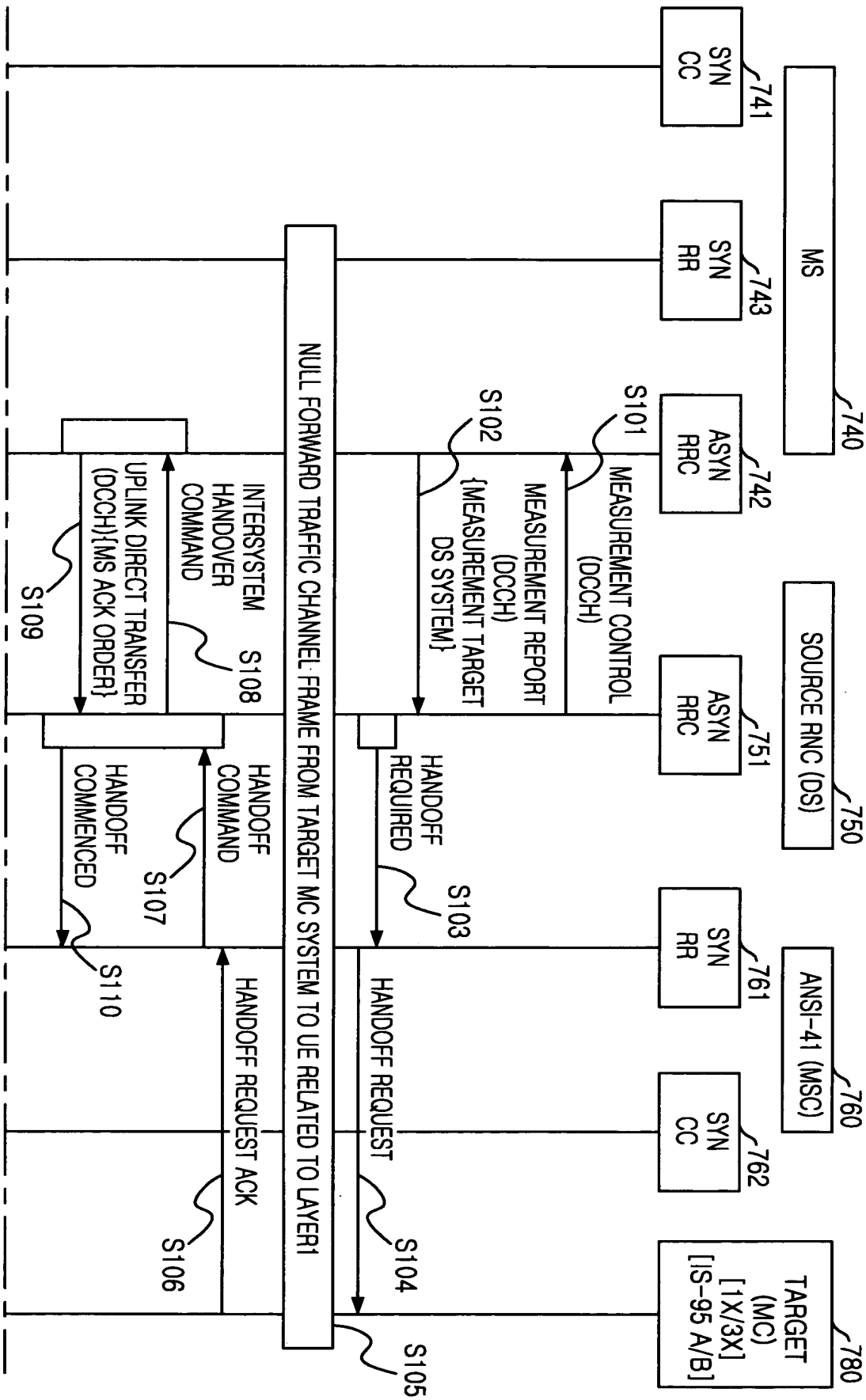


FIG. 11A is a sequence diagram illustrating a handoff process from a target MC system to a UE related to layer 1.

FIG. 11B

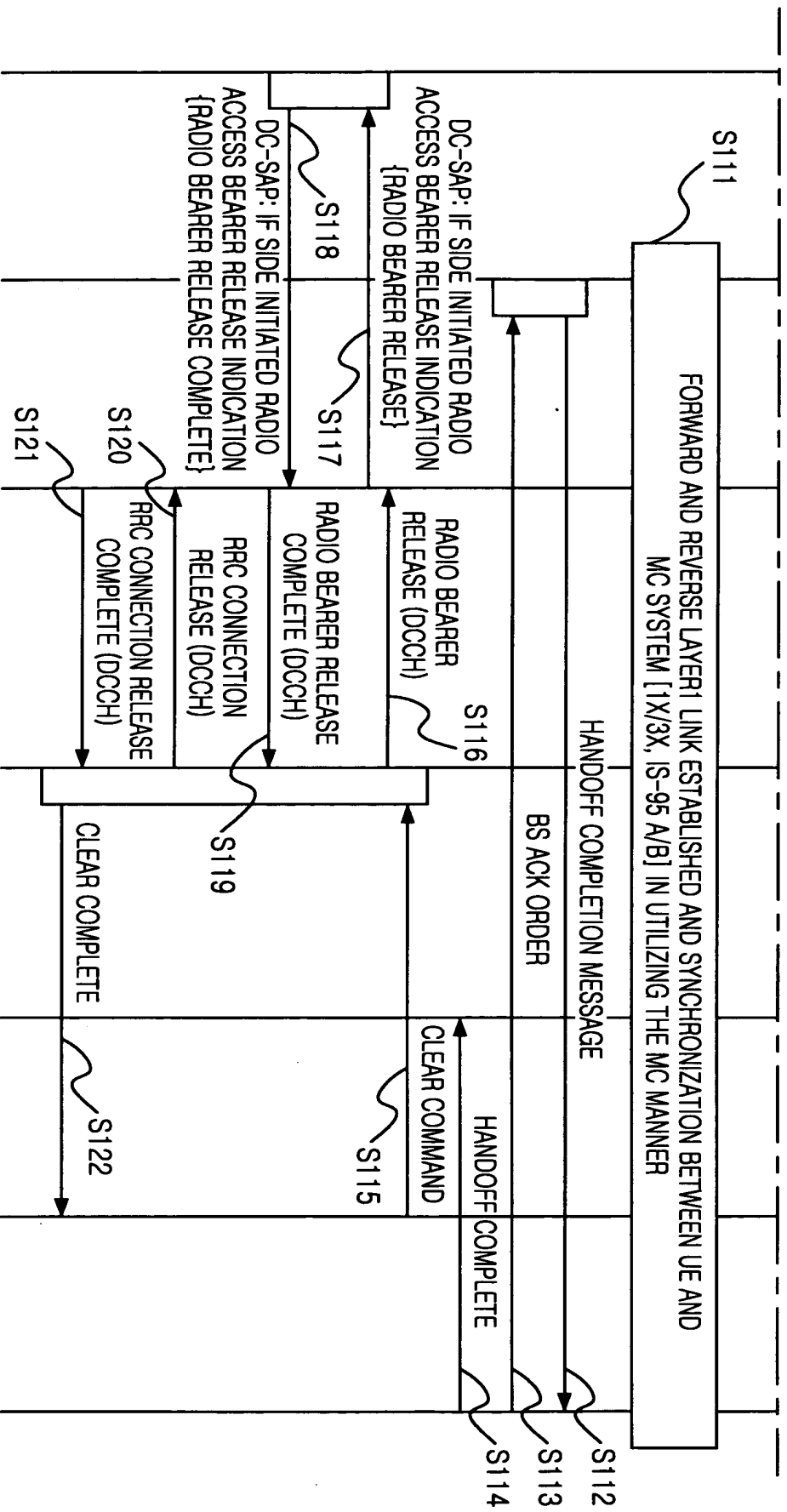


FIG. 12A

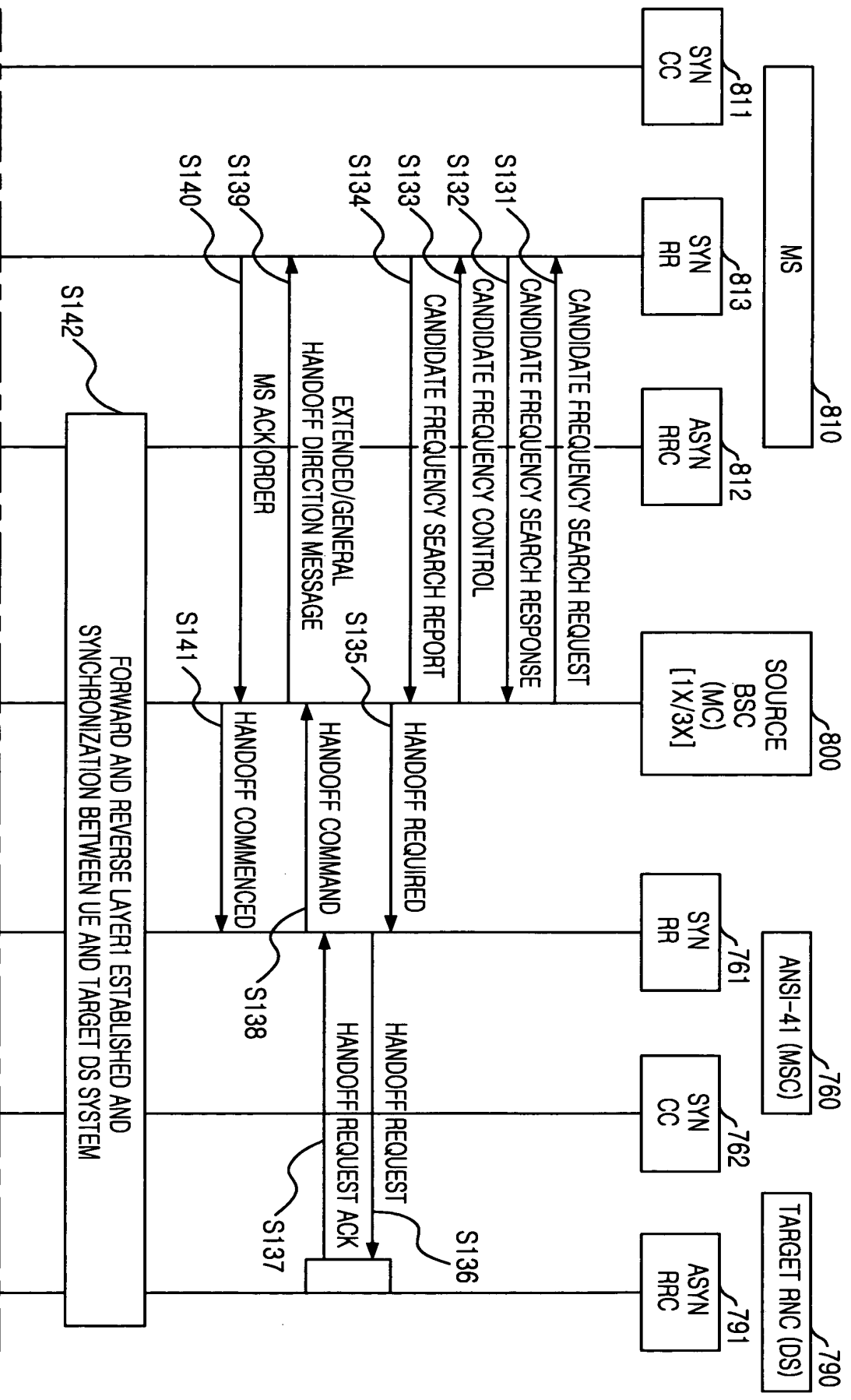


FIG. 12B

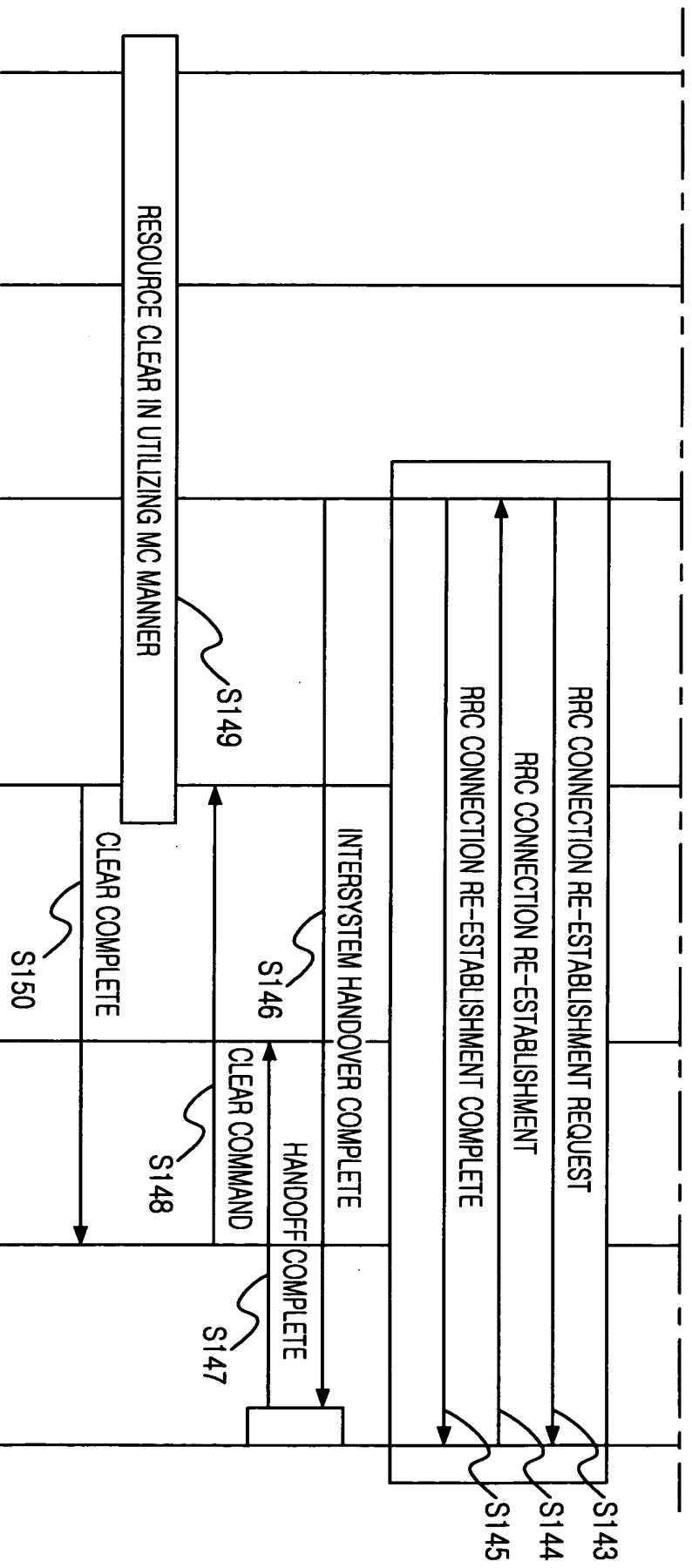


FIG. 13A

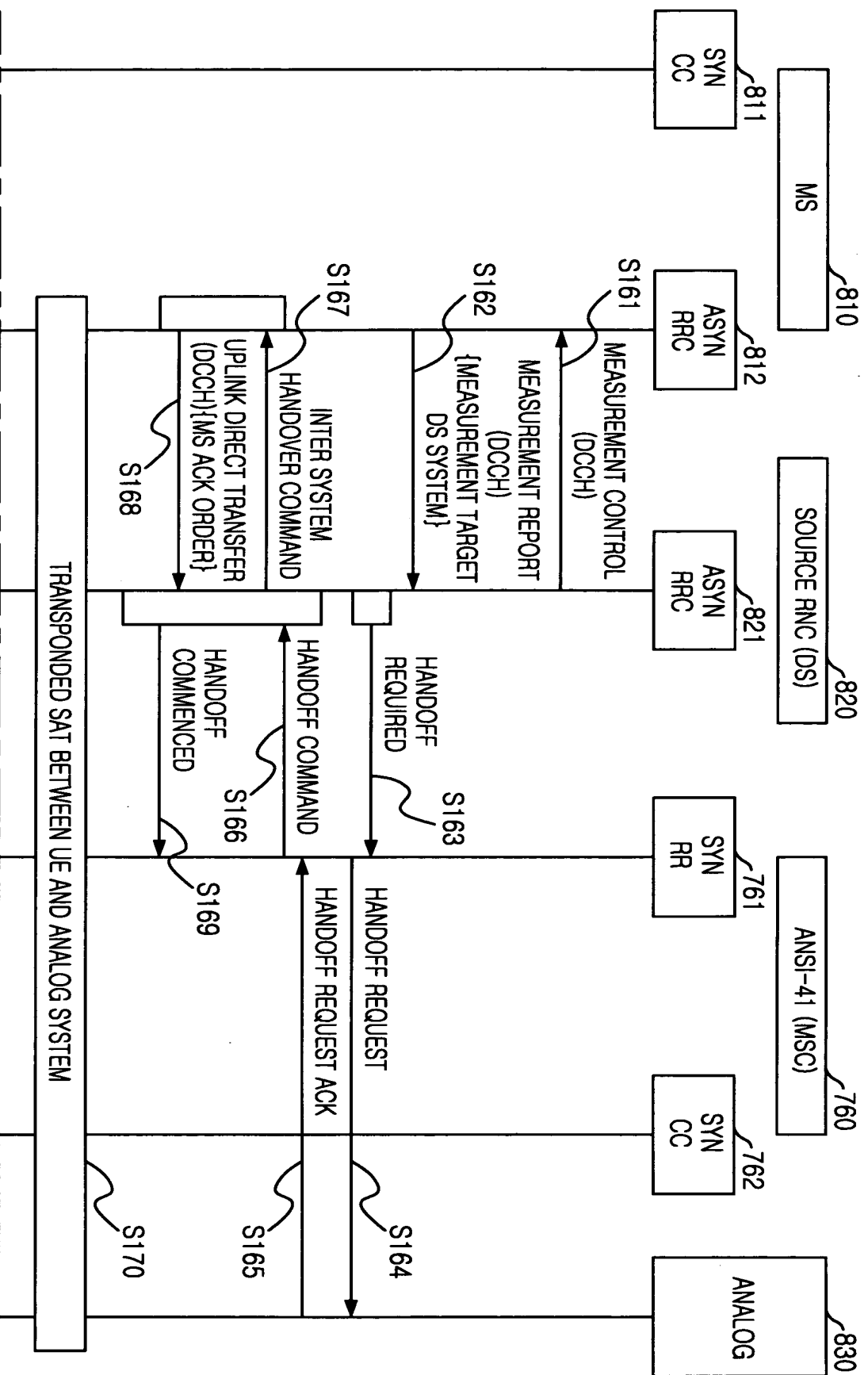




FIG. 13B

